Assume that a bell glass with an orifice of an area w, within which the kerosene is constantly maintained at a height *PI* (Fig. 22), is immersed in water. Neglecting, for the moment, the coefficients of contraction /q and of velocity /C2, which, for this case, have not been determined, the formula for the flow will be simplified. The hydrostatic pressure at the orifice co will be equal to the weight of a column of water *H* less the weight of a column of kerosene of the same height, that is to say:

Water

F 2r>

"k° ^ne

$$\delta = H\,(A_{water} - A_j$$

A designates the specific weights corresponding to the indices.

But as this head must be given in meters of height of the liquid which is flowing, the expression for the head will be

r —A; ^kerosene — *

kerosene

Akor<

Introducing this value of *h* in the formula for the volume flowing, will give, for the volume of a light liquid (kerosene) flowing through an orifice into a heavy liquid (water), the following expression:

Awater —2

(A)

Passing to the case of the air and the gases in furnaces, this expression will become

Q =

r — Ag

Agas

in which H designates the distance from the lower free surface of the gas to the opening in the roof, or, as it may be said, the thickness of the layer of gas.